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Outdoor Recreation in Virginia**

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COMMONWEALTH OF VIRGINIA

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Volume XXXIII/No. 3

IN THIS ISSUE

PAGE

Guest Editorial: Hitched to the Universe	3
Letters	3
Turkeys Can Tough It!	4
Furry Political Plum	6
Those Other Bass	8
Responding to the Challenge	9
A Course for Teachers on Virginia's Natural Resources	12
Conservationgram	13
Science Museum of Virginia	16
Let's Cook Fish Head Stew	17
Fishing Hits the Campus	18
In Nature's Garden: Spring Beauty	20
Know Your Biologists: Settle; Neal	21
The Drumming Log	22
Youth Afield	23
On the Waterfront	24
1972 Trout Stocking Plan	25
Bird of the Month: The Common Grackle	27
Ecology: A Wild Idea	28

Observations, conclusions and opinions expressed in *Virginia Wildlife* are those of the authors and do not necessarily reflect those of the members or staff of the Commission of Game and Inland Fisheries.

COVER: Immature Cooper's hawk, by Ralph Conner, Richmond.

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Hitched to the Universe

THE GREAT PHILOSOPHER Will Durant wrote of ancient Crete: "We do not know which of the many roads to decay Crete chose; perhaps she took them all. Her once famous forests of cypress and cedar vanished; today two-thirds of the island are a stony waste, incapable of holding the winter rains. Perhaps, as wealth and luxury increased, the pursuit of physical pleasures sapped the vitality of the race, and weakened its will to live or defend itself: a nation is born stoic and dies epicurean."

Born stoic and die epicurean. Some see that in Rome's decline and fall, the divorcement of the masses from the land, and the resultant bread and circuses to keep them occupied.

Somewhere there must be a middle ground, where Mankind can hold on to earth attachments and strengths, without surrendering some of the creature comforts we hold dear. And surely there is some way we can have those creature comforts without destroying our natural world.

The short history of this continent—and it *is* short as history goes—has been one of "mining" the resources as if there were no tomorrow. Suddenly, in the "ecological seventies" we are faced with tomorrow, though there still are many who do not yet see that the day of reckoning is at hand.

Some businesses are facing up to the facts but most are not. Instead they are using advertising campaigns to try to convince the public that all is well, or that they are doing more about meeting their environmental responsibilities than they are. Some take the tack that the doomsayers have always been with us and deserve no attention. Others agree the doomsayers may have a point, but *they* aren't guilty, and besides "we're spending umpteen millions to clean it up!" Most insidious of all are those who are muddying the waters with half-truths via their well-heeled public relations staffs to lull us into complacency.

In our complex society the individual is beset with all sorts of ready answers, conflicting, obfuscating and confusing. Phosphates are bad, are good, are harmless, or don't matter one way or the other. Lead or other heavy metals in our air or our food are killing or crippling or are harmless. Pesticides—both herbicides and insecticides—are necessary, or menacing. You can get every pronouncement, all seemingly backed by feckless authority and mutually contradictory.

So whom do we believe? Well, there are no easy answers, either in nature or in things of Man. If there is one dictum you can adhere to it is this: If it's easy it's probably wrong.

It might be well to keep Durant's observation about Crete in mind: a nation is born stoic and dies epicurean. Is there anything for modern America in that? We think so. Keep in mind, also, John Muir's observation: When we try to pick out anything by itself, we find it hitched to everything else in the universe.

Lastly, we might tie to Barry Commoner's dictum: There is no such thing as a free lunch.

J.F.K.

Reprinted by permission from *The Missouri Conservationist*, Missouri Department of Conservation, James F. Keefe, Editor.

Weekend Hunter Speaks

VIRGINIA may be for lovers but your open hunting season is for the aristocrat! Apparently no consideration is given to the poor working man or his children who are in school. Otherwise deer season would begin on a Saturday, instead of Monday. While we are at it, how about the counties where doe hunting days are Mondays, Tuesdays and Wednesdays? We, the peasants, could hunt doe if we were willing to give up a day's work, or take an unexcused day from school.

But we do not have a say in the matter, do we? Your Commission's hearings are on work days, so we cannot attend and air our thoughts.

R. A. Wood
Richmond

A great many considerations go into setting hunting seasons, including what members of the Commission think a majority of sportsmen want in regard to opening dates. You are not correct in assuming that your views cannot be heard unless you are able to attend the Commission's regulation setting meetings. The Commission welcomes suggestions by mail, and considers the views of those who write as well as the statements of those who attend the public hearings. Your comments will be placed before the Commission at the proper time.—Ed.

Objection is Heard

I'D like to object to the article "Reforestation of Virginia Timberlands," on page 19 of the January issue.

To anyone who is interested in wildlife, the idea of killing off all brush and hardwoods to plant sterile rows of pines is really appalling.

Certainly we need forest products, including pine lumber. Certainly a landowner is entitled to grow pine to the exclusion of all other vegetation if he so desires. But I think it should be pointed out that this practice is certainly poor conservation and directly opposed to the objectives of the Commission of Game and Inland Fisheries.

Birds and animals need food and cover, and rows of even age pines provide them with precious little of either. I would like to see the Division of Forestry get involved in a program that would provide profit for the landowner and jobs in the lumber industry while helping conservation objectives too. Certainly the landowner who can raise a healthy stand of oak, walnut, and other hardwoods is going to get a good return too.

It seems to me that some accommodation must be made here that will both help timber production and wildlife. As it is, the state is simply spending money to assist wildlife on the one hand and destroying the same wildlife through so-called "forestry" on the other.

What do the readers of *Virginia Wildlife* have to say about all this?

Arthur L. Cone, Jr.
Vienna

EACH year winter's cold and snow awakens a deep concern for those who are interested in the welfare of nature's creatures. This concern is most evident when the surface of heavy snow melts during the day, freezes over at night, and successive snows accumulate over a period of two weeks or more. Such conditions occur occasionally in Virginia during the rigorous winter period from about mid-January through March, and it is not unusual for layers of snow to accumulate to depths of two feet or more in the higher elevations. For modern man, who no longer must depend entirely upon nature's bounty and his own instincts for survival, it is difficult to imagine how any-



Photo by Leonard Lee Rue, III

thing could survive such conditions. Nature, however, seems to take care of her own.

Any existing plant or animal is obviously well adapted to its environment and the weather changes occurring in that environment or it would have disappeared long ago. This is not to say, however, that extreme changes in the environment do not cause mortalities. Mortalities do occur, and this is natural, but those generally affected are the old, the crippled and the diseased.

Few game species are better equipped for winter survival than the eastern wild turkey (*Meleagris gallopavo silvestris*). Mr. R. Wayne Bailey, turkey research biol-

ogist, formerly with the West Virginia Department of Natural Resources, has very accurately described wild turkeys as "omnivorous opportunists." These are a pair of "50 cent" words that simply mean turkeys will eat almost anything available that will fit into their mouths! They choose from a wide variety of foods, both plant and animal, that are within and below the layer of leaves and organic debris on the ground. Plant foods taken consist of such items as seeds of numerous plants, also leaves and, occasionally, entire plants. Other plant foods include tubers, rootlets, bulbs, rhizomes, miscellaneous dried fruits and dried berries. Animal foods such as earthworms, millipedes, centipedes, spiders, snails, insects and salamanders are also uncovered by the active "scratching" done by turkeys. All these foods are readily available year-round except when covered by deep snow or held fast in frozen ground. When such conditions do occur, turkeys frequently shift their range to the hollows on the "sunny" or south-facing slopes of the ridges. There the snow is generally not as deep, and it melts faster allowing the birds easier access to the food bits beneath.

When melting snows freeze over at night, the resulting crust makes feeding more difficult. Since turkeys do not possess the strength needed to tear through the thick

Turkeys

crust, they have learned to adapt in other ways. This writer has observed two flocks of turkeys feeding behind deer after they pawed through the crust in search of food. Perhaps feeding "under deer" would be a more accurate description! It is a comical situation indeed to watch turkeys dart under and around the feet of deer as they feed, much to the annoyance of the deer. After being chased away by the deer, the turkeys often countered by "charging" headlong toward the deer while flapping their wings. This action usually scattered the deer just long enough to allow the birds to grab a few quick bites before the deer regained their composure and returned at a run!

Perhaps the most sought after food sites during severe winter conditions are spring seeps. These are wet areas usually found high in mountain hollows that are not large enough to be considered springs. They usually have no detectable water flow, and the area surrounding them normally remains unfrozen and free of snow. In earlier months these narrow hollows acted as funnels, trapping and holding fruits and seeds that fell from surrounding trees. These open and unfrozen areas offer choice feeding during periods of heavy snow cover.

An instance occurred last winter which attests to the value of spring seeps. Bath County Game Warden Don

Miller contacted me to see if I was interested in examining the carcass of a wild turkey which had been killed illegally in the Little Back Creek area of the county on January 12, 1971. Don had followed the poacher's tracks back to the spot where the bird had been killed after it had fed in a small spring seep. There was 10 inches of snow on the ground the day the bird was killed, and there had been 18 days of continuous snow cover prior to that time. The bird's carcass was frozen and in remarkable condition for examination considering that it had been hidden down the hole in an outdoor privy!

The bird's crop was nearly full, containing approximately ½-pint of food material. The contents were sent to the Patuxent Wildlife Research Center at Laurel, Maryland, for analysis. The examination report indicated "that the turkey had been feeding in an unfrozen, moist or wet area, bordered by pastures or other openings." The following items were noted, and their volumes estimated while the items were still in an undried condition:

Plant Material:

About 45 subglobose corms of the bulbous buttercup (*Ranunculus bulbosus*) most of which were ½ to ¾-

ant (Formicidae); trace. Several spiders (Araneida); trace. Fragments of a millipede (Polydesmidae); trace. One tiny land snail (probably *Striatum milium*).

The above would certainly indicate that this turkey was in no danger of starving. The wide variety and amount of foods in the crop are particularly interesting when you recall the conditions in the area prior to the bird's death. The examination of this turkey crop is but one of hundreds that have been examined in Virginia and neighboring states that attest to the ability of the wild turkey to survive winter's rigors.

As a result of years of experience and research, the Commission of Game and Inland Fisheries recognizes that winter feeding of game at public expense can seldom be justified because of the proven ability of game birds and animals to survive normal periods of stress.

It is more often the case that well-intended winter feeding does more harm than good! More often large portions of distributed food are utilized by animals less desirable than the species for which the food is intended. Predators are readily attracted to feeding areas. Game birds and animals concentrating at a feeding site may transmit diseases which can destroy the entire popula-

Can Tough It!

By JACK W. RAYBOURNE

Game Biologist

inch in diameter; 70 percent. Many green leaves of of this buttercup; 12 percent. Several hundred seeds of jewelweed (*Impatiens pallida*); 5 percent. Many short, thickened "rootstock-buds" of rice cutgrass (*Leersia oryzoides*) and fragmentary leaves and a few seeds of this grass; 9 percent. Leaf fragments of other grasses, including bluegrass (*Poa* sp.); 1 percent. Fragments of green leaves of vetch (*Vicia* sp.), clover (*Trifolium* sp.), and several forbs; trace. Seven subterranean fruits and one aerial seed of hog-peanut (*Amphicarpa bracteata*); 2 percent. A few seeds of black locust (*Robinia pseudoacacia*); trace. Two seeds (and pods) of *Lespedeza frutescens*; trace. About 60 seeds of dotted smartweed (*Polygonum punctatum*); trace. One dried cherry (*Prunus serotina*); trace. Two seeds of frost grape (*Vitis vulpina*); trace. One seed of red maple (*Acer rubrum*); trace. A few leaves of cinquefoil (*Potentilla* sp.); trace. Seed of *Aster* sp. and sedge (*Carex* sp.); traces.

Animal Material:

Eight adult ground beetles including three species (Carabidae), two weevils (Curculionidae), and four Staphylinid beetles; 1 percent. Six soldier-fly larvae (Stratiomyidae), and one other fly pupa; trace. Two moth larvae and one pupa (Noctuidae); trace. One

tion. Fatal digestive disorders can result from gorging on artificial foods. For example, the bacteria present in a deer's rumen (stomach) require a gradual adjustment in order to digest unfamiliar substances. (Deer can literally starve to death on a full stomach of alfalfa hay or corn if the digestive system has not been gradually "conditioned" to accept them.) Also, game birds and animals may become accustomed to the daily hand-out of food to the point that dependency upon man may result. Supplemental feeding may also serve to reduce inherent wildness and, hence, the sporting value of certain species.

The closing statement in the section on Artificial Feeding from a booklet entitled "The West Virginia Wild Turkey" sums up the desirability of artificial feeding: "The purpose here is not to argue that starvation does not occur, for it is known that it does. However, it must be considered factually and in proper perspective. The heart of the issue is that starvation is a natural, recurring event. When it occurs there is so little than can be done about it, feasibly and economically, that trying to prevent it is an unjustified instrument of State policy. The money spent in winter feeding, especially if all costs were considered, would go a long way in judicious restoration of habitat or in the purchase of lands which provide, or will provide in the future, habitat for the wild turkey."

DOWN through the halls of conservation echo the slogans: "wildlife management is the science and art of producing sustained crops of wildlife for recreation," and "conservation is the wise use of our natural resources for the continuing good of the most people." Echos they are, indeed, when sounded off in the legislative halls where the fate of the chipper gray squirrel is considered.

It is inconceivable to some people how this fuzzy woodland creature gained its way into politics. Whatever its success technique, the story of this political plum has been written in Virginia's Legislature for many years. It is a rare occurrence when the squirrel season issue fails to make it, somehow, to the legislative floor.

The public has enabled bewhiskered *Sciurus carolinensis* to evolve into so complex a creature with such specific territorial requirements that it now deserves at least 10 different hunting seasons in Virginia. Although these varied squirrel seasons result in a colorful map with which to decorate the game law summary, many people see only "red" when confronted with the bewildering array of seasons.

Sound legislation is one of the most effective and far-reaching tools of wildlife conservation. Legislation, habitat improvement, education, and law enforcement are all vital tools of the trade of wildlife conservation. Each has its place and when used wisely, that is, when based on scientific research and carefully analyzed field observations, a successful program of wildlife conservation will be assured. Perhaps the squirrel hunting season has not been set in the most uniform and desirable manner. Perhaps changes are needed that will assure a more successful program and greater wildlife benefits for all.

The Problem

Gray squirrels are game animals and as such are heavily hunted in most parts of the United States. The hunting pressure they receive is second only to the cottontail rabbit. In Virginia, squirrels are the number one game animal. Economically, squirrel hunters contribute a large percentage of the over \$87 million spent annually by all hunters in Virginia in pursuit of their sport.

Interest in squirrels is widespread, and those interested are usually willing to speak their minds about "their" game animal. Because of the diversity of opinion that is voiced, the strength of some demands, and the seeming insignificance of an improper decision, the squirrel season is often batted around in political circles.

There is much sentiment attached both to the squirrel, and to the hunting season. Back in the days when anything sighted down the double-barrel was fair game, this sentiment was not present. Following an early period of exploitation of our natural resources, came an era of preservation. A national acceptance of

Furry Political Plum

By JACK M. LEE and ROBERT H. GILES, JR.
Division of Forestry and Wildlife Sciences
College of Agriculture and Life Sciences
VPI&SU, Blacksburg

Leonard Rue photo



the need to save what we had began to emerge, and the squirrel was caught up in this movement.

Along with the preservation movement, scientific investigation to obtain biological information on game animals began. The results of such studies have shown that squirrels normally have two mating periods. The first one usually occurs in December or January with another following in May or June. Squirrels give birth from 42 to 45 days after mating, and since the young are dependent on the mother for around 10 to 12 weeks, almost any shooting of female squirrels in the fall would leave some young in the nest to starve.

On the other hand, it is a rare hunter that goes hunting without wanting to bring home a coat bulging with game. Many squirrel hunters feel that the best time of year for a successful hunt is in early autumn when the acorns and nuts first fall, and while most leaves are still on the trees. Squirrels are actively cutting nuts this time of year, and hunters find that stalking conditions are better then than after the leaves have fallen and the hunter's visibility to the squirrel is increased.

As usual, there are two sides to every story. The early season that some hunters find ideal, also has several disadvantages. There are few hunters that will skin and have their wives cook squirrel carcasses that have one or two thumb-size, black botfly larvae growing in their backs. The kill is displayed, then thrown away; edible but unpalatable. In addition, as was mentioned before, during the early fall many female squirrels will still be caring for young which are not old enough to leave the nest. Sportsmen, even the boldest and most burly, cringe at the sight of lactating females which they have shot. Those young squirrels from the summer litter that have been weaned will be only half grown weighing about 9 ounces and again unpalatable, besides hardly making a mouthful.

The adults during this time are a year or more old and in the squirrel world fully adult and just completing the rigors of breeding season. Squirrels taken during an early season, such as any time from September 1 to October 15, are subject to the conditions just discussed. Uhlig (1956) estimated that in one year an early hunting season in West Virginia resulted in the loss of at least 300,000 squirrels. This loss consisted of young squirrels which died in nests after lactating females were killed, and botfly-infested squirrels discarded by hunters.

Some counties have sought an early season but were reluctant to go to September 1. Some of the previously given reasons undoubtedly weighed heavily in their decision. A sociological problem looms large in the background. Wardens and "honest" hunters decry the illegal shooting that sometimes occurs during an early squirrel season. The young turkey brood is especially vulnerable and entire flocks are suspected to have been wiped out by an accurate but thoughtless game hog. The threat of turkey poaching is probably one of the more influential factors causing some counties not to want an early squirrel season.

A Sound Approach

A sound program of wildlife management for Virginia must be based on the findings of scientific research and careful and critical field observations by trained personnel. Virginia's wildlife resource is too important economically, socially, recreationally, and ecologically for it to be managed largely by one-day-a-year hunters or woods-walkers. In addition to facts used, basic decisions must be made by conservationists and sportsmen interested in the squirrel. These decisions are difficult as evidenced by the legislative hodgepodge we call "Virginia's squirrel season." The difficulty lies in the possible confusion in deciding on the main objective we hope to achieve by proper management and by setting a squirrel season at a particular time. Two possible viewpoints as to what this goal should be are:

1. To provide the greatest amount of recreation to the most people while maintaining a maximum huntable squirrel population indefinitely.
2. To provide the greatest amount of recreation to the most people with a minimum waste of nestlings, fly-infested and small squirrels while maintaining a maximum huntable squirrel population indefinitely.

Virginia game biologists, relying heavily on research on the gray squirrel performed in other states and intensive field study here, can provide the basic biological information on the squirrel population needed to establish seasons. The biologist, being a hunter too, knows that squirrels are easier to kill in September than other months and many people would prefer to hunt during this pleasant time of year. He also knows, perhaps better than the average hunter because of research, that the number of squirrels wasted during this period is terrific! During a later season the total summer's squirrel production is available to the hunter although the animals may be more difficult to hunt. More important though, the number of squirrels wasted is much less during this time.

Biologists are convinced that the squirrel population can take almost any season that is dished out to it. If the population will not be seriously threatened by any season dates we might choose, the actual dates should be decided on ethical grounds as is reflected in the second objective above.

The problem is complex. There are gaps in what we know about the wishes of people, and in what effect various seasons have both on squirrels and people. The problem is scientific, sociological, and ethical . . . but not unsolvable. Sophisticated techniques are now available to deal with such complexities—that is, to balance out the advantages and disadvantages of various seasons. Research is now in progress at Virginia Tech for developing such a technology. The trade-offs made previously have been done intuitively, politically. Now, new inputs of information can be made to sharpen that process. As a result, improved answers are expected soon for that problem of the past, the greatest political plum of them all—the fuzzy squirrel.

Those Other Bass

By BOB GOOCH

Troy

I AM not about to risk raising the hackles on the backs of thousands of enthusiastic bass anglers in this country by insisting that their prize catches of both large and smallmouth bass were really just oversize sunfish. Nor am I likely to admit that those bronzed battlers that get me out of bed before dawn are anything but smallmouth bass.

But let's face the facts.

The true basses are another breed.

There are four of them in America. Two live in fresh water only, but the other half of the quartet are salt or brackish fish that spend much of their lives in fresh water.

Let's call them those other bass.

The freshwater purists are the white and yellow bass, *Morone chrysops* and *Morone mississippiensis*, while the salt or brackish variety are the striped bass, *Morone saxatilis*, and the white perch, *Morone americana*. Most field guides still use *Roccus* instead of *Morone* as the new designation is a recently adopted one.

These four fish are also frequently referred to as the temperate basses.

Because of its size the striped bass is the most popular of the true basses. These handsome fish may live more than 140 years and attain weights of 125 pounds or more, but fish in excess of 75 pounds are rare and their life expectancy is closer to 10 or 12 years. The white bass is becoming increasingly popular and provides many hours of exciting fishing in the Great Lakes and in the big reservoirs across the southern half of the United States. These bass run much smaller and a 3- to 4-pounder is considered a lunker. Both the yellow bass and white perch are smaller fish with 2- and 3-pounders rare. They average less than a pound in weight and under 10 inches in length.

A common characteristic of all the basses is a dorsal fin deeply notched between the spines and rays. The dorsal spines are graduated in height—progressively lower from front to back. The number of rays and spines vary slightly between the species.

All of the basses, except the yellow which has a golden overtone, are of a handsome silvery white color. Black, longitudinal lines are another distinguishing feature of the true basses. These lines are very pronounced on the striped, white and yellow basses, but not as much so on the white perch. The white perch does have a long lateral line running along its flanks, and an angler with good vision and a little imagination

can put irregular longitudinal lines on most specimens. The lines on the yellow bass are slightly interrupted, a feature that has prompted some fishery men to label the fish *Roccus interruptus* instead of *Roccus mississippiensis*. The pronounced stripes are the basis for the striped bass's most common name and even the white bass is often referred to as striped bass or striper.

Like most fish, the true basses are the victims of a wide variety of common names. The little yellow bass is often called streaker, black-striped bass, gold bass and barfish. The white bass is probably most often referred to as striper or stripe, but also gets silver bass, streaker and barfish. The popular striped bass is the most abused by being called rockfish, greenhead, striper, streaked bass, rock and squidhound. The white perch gets by easy—silver perch or sea perch.

All of the basses school and move around a lot. They eat any kind of animal life of suitable size with small shrimp, crustaceans, squids, worms and insect larvae providing them with frequent meals. Small fish are a favorite food.

By nature the striped bass is a coastal fish. It prefers inshore waters, bays and coastal rivers, rocky reefs and sandy beaches. The white bass was originally a fish of the larger rivers and lakes of the Midwest and of the Great Lakes. These popular bass like the open water, rarely seeking hiding places. The yellow bass is also a native Midwesterner where it has long been common in the larger rivers, their backwaters, adjoining lakes and major tributaries. The yellow bass likes gravel bars, rocky reefs and underwater brush. The white perch, originally a fish of the brackish and tidal waters of the Atlantic Coast, is also now common in many freshwater lakes and ponds.

All of the basses except the yellow bass, when possible, ascend rivers during the spawning season. The striped bass sometimes goes 75 to 100 miles upstream on its spawning runs. Even the landlocked fish follow this spawning instinct, ascending rivers which feed the large reservoirs in which they live. Both the white bass and white perch also seek the free flowing waters of feeder streams during the spawning season, though both can spawn successfully in shallow water over shoals, rocks or gravel bars. The yellow bass deposits its eggs over gravel bars, rocky reefs or underwater brush.

Generally speaking, the true basses are big-water fish, though both the white perch and yellow bass have been introduced to many small ponds and lakes.

The natural range of the striped bass is the Atlantic Coast from the St. Lawrence River in Canada to the St. Johns River in Florida and the Gulf Coast from western Florida to Lake Pontchartrain, Louisiana. The big bass are particularly abundant in the Chesapeake Bay and Albemarle Sound. The original range of the white bass was the Mississippi River and Great Lakes drainage system, while yellow bass were found from Minnesota and Wisconsin south to Alabama and Texas.

(Continued on page 14)

Responding to the Challenge

By R. H. CROSS, JR.

Chief, Game Division

Photos by Leonard Lee Rue, III

THIS year students of the fifth through twelfth grades in schools all over Virginia participated in the 25th consecutive annual Wildlife Essay Contest sponsored by the Virginia Chapter of the Izaak Walton League of America and the Virginia Commission of Game and Inland Fisheries. A total of \$3,600 in prizes will be awarded for various categories of excellence.

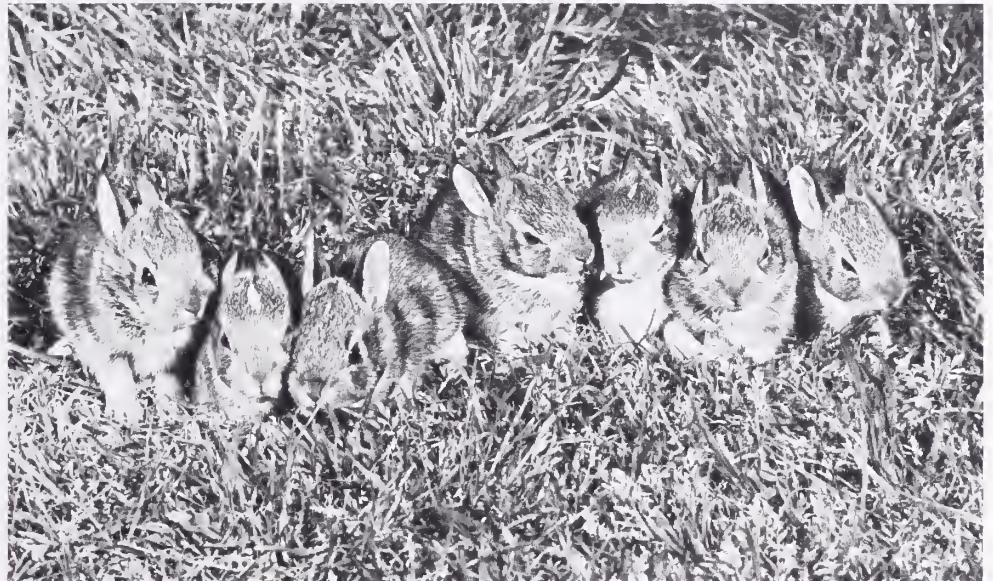
In connection with the 23rd contest I would like to repeat a portion of James F. McInteer's editorial which appeared in the May, 1970, issue of *Virginia Wildlife*.

"The theme for 1969-70 Wildlife Essay Contest was

doors made them aware of what was happening when others were not. They demanded that state game and fish agencies be established, and they alone provide the financial support for those agencies.

"No species in America today is threatened by legal hunting. Wherever suitable environment is preserved, there also will wildlife be preserved, whether it is subject to legal hunting or not. Wherever wildlife habitat is destroyed, contaminated, or otherwise degraded, there also will wildlife be destroyed or endangered, whether it is subject to legal hunting or not. And wherever a high quality human environment is pre-

Where suitable environment is maintained, wildlife will flourish.



'What Endangers Wildlife in Virginia,' and many excellent papers were submitted on the subject. But there was one disturbing fact. Not all, by any means, but entirely too many of the students reached the conclusion that the human hunter is one of the major threats to wildlife. This is in no sense a criticism of the students. What students in the fifth through twelfth grades believe about resource conservation is what they have been taught to believe, and unfortunately the belief that hunters are a serious threat to wildlife resources is one that still seems to be held by many in the older generations as well as by students. To the extent this view is held, conservation communication has been inadequate and conservation education has failed to get an important principle across.

"The fact is that hunters and fishermen were the first people to protest and condemn the destruction of America's forests, soils, streams, and wildlife resources. They were first because their knowledge of the out-

served, there also will wildlife habitat and wildlife be preserved.

"How can we get these simple but absolutely fundamental conservation principles across?"

The Virginia Commission of Game and Inland Fisheries, with headquarters in Richmond, is a special fund agency in that our operation is financed solely with funds received from the sale of hunting, fishing, and trapping licenses, boat licenses, and miscellaneous permits authorizing the holding of game birds, game animals and game fish in captivity, mostly for propagation purposes.

Our Commission is divided into four major service divisions including Education, Fish, Law Enforcement and Game. I would like to discuss briefly the Game Division's conservation program in Virginia.

On a state-wide basis the most important thing that a conservation agency can do is to learn enough about wild game populations to be able to regulate the annual

harvest in such a manner as to assure sustained yield production. Annual harvests can be controlled by hunting season dates, hunting season lengths, bag limits and the restriction of either-sex shooting of such species as white-tailed deer, wild turkeys and pheasants.

Rarely is it necessary to stock birds, animals or fish in order to maintain or increase populations. The amaz-

a reduction of the number of animals using that range. The desired reduction is accomplished by the either-sex shooting of deer until populations are brought under control.

Since the majority of the state's wildlife resides on private lands (15,250,000 acres), it is logical for the Game Division to be primarily interested in these areas. Our top priority job here is to develop, through research, wildlife management techniques which the private owner might apply to his lands with good results.

Extension service offered by 15 game biologists and, to a lesser extent, by 36 game managers includes:

(1) Wildlife management planning on individual land holdings.

(2) Advice on protection of crops and timber from damage by nuisance species.



With brood stock present, a wild population will expand in any hospitable environment.

ing reproduction potential of most game species has prompted Dr. Durward Allen to say, "A population decline is rarely due to reduction, only failure of a population to expand as normal." Thus we must assume that if sufficient brood stock is present a wild population will expand in any hospitable environment.

Our Game Division's first responsibility is to gather, through survey and inventory, data for use in formulating sound recommendations for hunting seasons and bag limits. In most instances, we are forced to rely on indicators since it is impossible for us to count our stock as is regularly done by the producer of domestic birds and animals. We know, for example, that a yearling buck deer on range supporting an optimum deer population will produce antlers carrying 4-8 points and will weigh 95-100 pounds field dressed. The same animal on overcrowded range might produce nothing more than 2 spikes, an inch or two in length, and the field-dressed weight might be as low as 50 pounds. Over large areas the solution to such over-population problems is not the increase in quality of the range but



Multiflora rose and pine provide food and shelter for wildlife.

(3) Suggested desirable annual harvests.

(4) The provision of limited quantities of planting materials for the improvement of wildlife food and cover. These materials are furnished free of charge.

For just a little over thirty years the Virginia Commission of Game and Inland Fisheries has been managing wildlife populations on specific areas to provide public hunting and associated outdoor recreation for the sportsmen of Virginia. We have been immensely successful in our cooperative wildlife management program with the U.S. Forest Service in the western section of our state.

West of the Blue Ridge Mountains we are now harvesting more than 13,000 deer per year as compared to 1300 in 1947. In 1969 there were 164,784 deer

hunters alone in this area.

In southwest Virginia the wild turkey is now a prized game bird where it didn't even exist in 1960.

The existence of both species (deer and turkey) is the direct result of restoration programs planned and carried out by our agency. Between 1937 and 1944 we purchased approximately 1800 deer, and since 1944 an additional 1500 animals have been trapped and transplanted by our personnel. Currently we are trapping and moving 100-200 deer per year from the Radford Arsenal in Pulaski County where hunting is prohibited because of the danger of igniting stored explosives. Since 1955 we have trapped 513 wild turkeys from our lands or lands under our control and moved them to areas devoid of brood stock.

For the past 12 years we have been experimenting with various exotic game birds with the hope of finding



Top priority is development of techniques that may be applied on private land.

one or more species which might become adapted to Virginia and thrive in huntable numbers. As the result of this program Virginia became the first state south of the Mason-Dixon line to declare an open hunting season on pheasants. This two-day season gives us valuable information on survival, dispersal, and total numbers of these introduced game birds.

These are but a few of the things that have happened in Virginia wildlife management in the past thirty years.

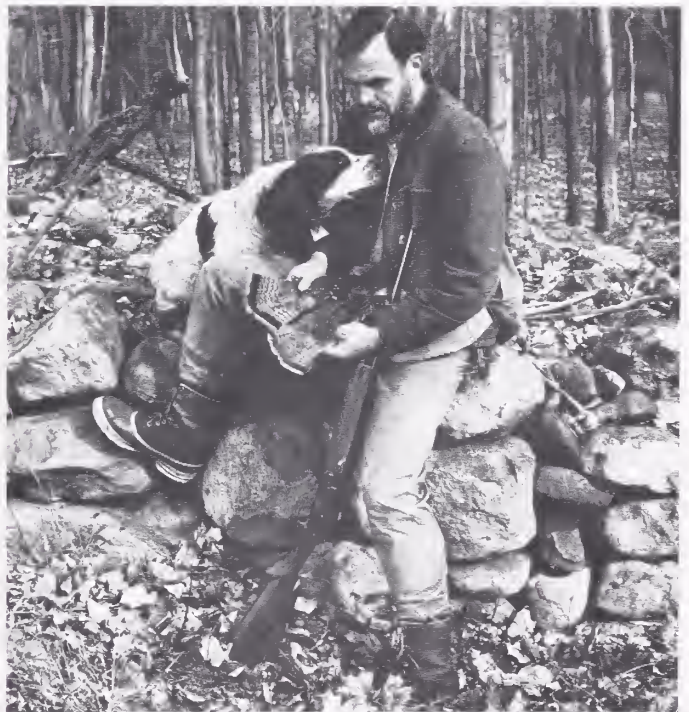
We have made significant progress in obtaining more land and water for public recreation. Numbers of sportsmen have increased and corresponding game management budgets have gone up. In fact, game management has progressed to the point that new ad-

ministrative soul searching is needed in order to attain its full capabilities. Old methods of setting goals will not suffice to meet tomorrow's demands for outdoor recreation.

Virginia is growing rapidly industrially. Suburban building, super highways, factories and other developments result in a loss of wildlife habitat and available land for hunting. More lands are becoming unavailable through closure for one reason or another. The law of supply and demand has entered the outdoor recreation field, and wildlife managers must learn to produce more game and more recreational opportunity on the same acres.

No longer is it sufficient to report to our sportsmen that last year we established 200 acres of new wildlife clearings, planted 2000 acres of wildlife food, established 300 water holes, or in our state-wide farm game program we distributed 50 tons of wildlife planting materials.

Now we must report that last year our Division spent \$980,700.00, provided two million man-days of hunting and associated outdoor recreation on 1,900,000 acres of public lands, and next year our goal is to do better. Like the message on a milk bottle used by an enterprising dairy, "Our cows are not contented—they are



Old methods of setting management goals will not suffice to meet tomorrow's demands for quality recreation. Photographer Leonard Rue examines a pair of grouse, male above, female below.

always striving to improve."

With the new emphasis being placed on recreation in most land-use agencies a new concept of management has evolved. Administrators are stressing man-days of recreation provided, and judging programs accordingly. Biologists are faced with a difficult challenge and they must adapt to the change.



Subjects To Be Taught

GEOLOGY—The origin and nature of the earth's crust; the forces at work to alter the crust, to form mineral deposits; the origin and nature of mineral deposits, with examples from Virginia's mineral resources; surface water and ground water as they work to break down and modify the earth's crust through weathering and erosion, and also water as it pertains to the needs of man.

MARINE LIFE—Description of the marine environment with its typical organisms, action and resultant problems in relation to the field of conservation.

SOIL AND WATER—The parts of soil and their importance; how soil contributes to plant growth; the relation of soil to the parent material from which it was formed; the soil profile and its characteristics; and the program for conserving Virginia's soil and water resources.

Small watershed development; use of soil for storing water; and related water management principles.

FORESTS—Forest conservation as it relates to the management of timbered areas; use of the forest as a source of raw material for the wood-using industries for soil stabilization, for watershed protection, and for recreation.

WILDLIFE—Characteristics of animal populations, including fish, that are of importance to man's use of this resource; relation of animals to soil, water, and forest, and the relations of these four basic natural resources to man and his welfare.

Scholarships

A limited number of scholarships to cover tuition, meals, and lodging will be available to Virginia school teachers from funds provided by several interested organizations. All Virginia school teachers are eligible to apply. In order for a scholarship application to be considered, it must be received by May 1, 1972.

To apply for enrollment in this course, check the college of your choice, tear off this coupon and mail to: Virginia Resource-Use Education Council, c/o E. W. Mundie, Seitz Hall, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061. Be sure to mark the college of your choice.

I am interested in the Natural Resource Course
offered at:

☐

Virginia Polytechnic Institute and State University. June 13–June 30, 1972

☐

Madison College
June 19–July 7, 1972

☐

The College of William and Mary
July 17–August 4, 1972

☐

Virginia State College
July 12–August 1, 1972

Date _____

Name _____

Address _____

I should like to apply for one of the scholarships. Please
send me the necessary forms.

Signature of Applicant _____

CONSERVATIONGRAM

Commission Activities and Late Wildlife News ... At A Glance

HUNTERS BAG 358 BEARS. Hunters in the Old Dominion managed to bag 358 bears during the 1971 season, the fourth highest total in the state's recent history and not much shy of the record 381 taken in 1963. Augusta County led the state with 54 bears bagged within its boundaries followed by Rockingham County where 34 were taken and Alleghany County where hunters downed 29. A total of 25 taken in the Dismal Swamp was the highest from that section in many years. Flooding in large portions of the swamp which concentrated the bears on the high ground was given as the reason for the increase.

3641 TURKEYS BAGGED IN FALL. Virginia's fall turkey kill totaled 3,641 birds, which was only slightly below the 4,253 bagged last year. Last year's total was only slightly off the 4,534 record fall kill of the year before. Almost all of the drop was in the central mountain counties of Alleghany, Augusta, Bath, Highland and Rockbridge, where the kill declined an average of 36%. In most Piedmont counties with gobblers only, hunting declined sharply but numerically the drop was not great. The 158 gobblers bagged in southwest counties open to fall turkey hunting for the first time last season helped to offset losses elsewhere.

In spite of a 37% drop, Bath county was still the top turkey hunting county in the state with 436 of the big birds bagged there. Augusta ranked second with 293 birds checked while in Frederick the kill was up to 276, placing it third in the state. Samples from counties along the Shenandoah Valley and in the Roanoke area showed about 70% juveniles in their fall turkey kills, indicating a good hatch. In the central mountain counties juveniles made up only 58% of the total, the second year in a row that reproduction has been low in this section.

STATE DEER KILL TOTALS 42,122. Virginia's 1971-72 deer kill totaled 42,122, just shy of the 42,313 predicted by Game Commission biologists and nearly 4,000 above last year's record deer harvest. About 1,000 of the increase came from west of the Blue Ridge counties, the remainder coming from eastern counties. Over 2,000 more deer were bagged in Piedmont counties south of the James River, many of which had an extra day of doe shooting.

Southampton county led the state with 2,063 deer. Bath county ranked second with a total of 1,777 deer and Caroline rated third with 1,743 deer taken during the season. In Rockingham 1,706 deer were checked, setting a new record for the county. Buckingham rated fifth with a total of 1,547 deer, and a final count of 1,205 from Fluvanna sets a new record for that county.

In comparison with 1970 kill figures available, Virginia's 1971 deer kill will rank about ninth among states east of the Rocky Mountains. Some states base these kill figures on estimates rather than actual count as used in Virginia.

350 ACRE GIFT EXPANDS HAVENS AREA. Mr. R. S. Kime and Mrs. Lucy Brown Russell of Salem, Virginia, have donated to the Virginia Game Commission a 358 acre tract adjoining the Commission's Havens Wildlife Management Area. The parcel adjoins the east side of the 6,063 acre Game Commission area just west of Salem, making a welcome addition to the more easily traversed rolling portion of the property as opposed to the area's steep western slopes.

In thanking the donors, Commission Executive Director Chester Phelps said, "The tract is a most welcome addition to the Havens Wildlife Management Area and will provide untold hours of enjoyment for our citizens in the years to come." He commended them for their "concern for the future welfare of Virginia's wildlife resources, her sportmen, and environmentalists."

The area is completely wooded with pole sized trees, mostly oaks and hickories with scattered pines. The new tract is not presently accessible from the east side of Fort Lewis Mountain, but may be reached by hiking over the top from route 622 on the area's western edge. The Havens area offers some hunting opportunity for bear, deer, quail, grouse, rabbits, raccoon, squirrels, and turkeys.

Like its larger relative, the striped bass, the little white perch was also originally a fish of the Atlantic Coast, though its range was more limited—from Nova Scotia south to the Carolinas.

With the possible exception of the yellow bass, the ranges of all of the basses have been extended by transplanting seed stock to other waters—many of them far from the fish's native home.

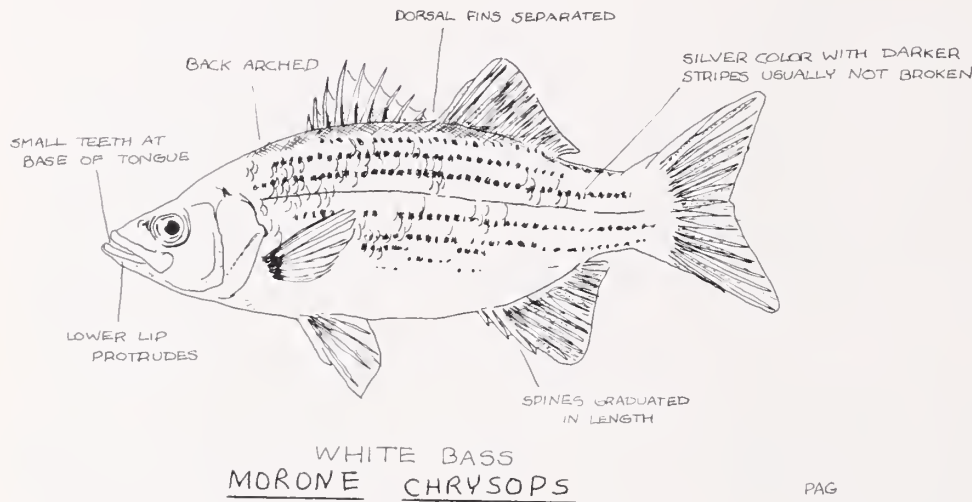
The basses have demonstrated that they can adapt to changes in environment and as a result man has not only widened their ranges considerably, but also introduced them to waters quite different from those nature provided them with. The fish have demonstrated that they are willing to accept man's management of their destiny.

Early management efforts were directed toward the big striped bass so popular among anglers along the Atlantic Coast. As early as 1879 a tank of 132 little

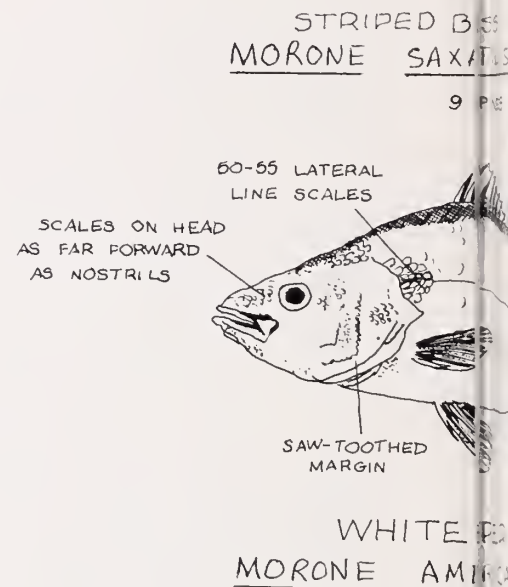
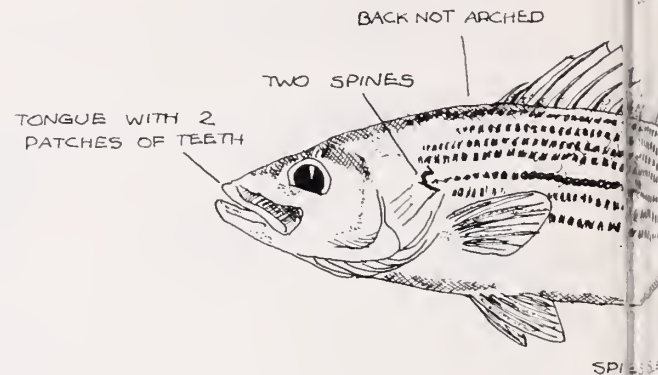
ervoirs throughout the United States, and show promise of becoming a major species of the impoundments.

The white bass too has proved himself a natural for the big reservoirs and has been widely introduced. The fish are very prolific and white bass populations have a habit of exploding in the big lakes, providing

Illustrations by Pat H. H. H.



PAG



stripers from Navesink River in New Jersey were hauled across the continent by rail and released in San Francisco Bay. Another release was made in 1882 and California anglers now land approximately 750,000 stripers annually. The migratory fish have spread up and down the West Coast with catches being reported from Mexico to the mouth of the Columbia River. A sizable population lives in Coos Bay, Oregon.

Back in 1941 a few striped bass were trapped behind the dam when the gates to the big Santee-Cooper Reservoir in South Carolina were closed. By the late 40's anglers were making spectacular catches of the land-locked stripers. South Carolina biologists became interested and soon learned that the normally anadromous fish did not have to return to salt water as a part of their life cycle. A few years later, Virginia biologists established a flourishing striped bass fishery in new Kerr Reservoir on the Roanoke River. Fingerling stripers have since been introduced to big res-

ervoirs throughout the United States, and show promise of becoming a major species of the impoundments.

Forage fish are necessary to the successful establishment of both the striped and white bass in multiple-use impoundments and both the alewife and gizzard shad meet this need. Like the basses, the shad and alewife are highly prolific and predation is necessary to control their numbers. The true basses provide this.

Popular within their natural ranges, but somewhat small, the white perch and yellow bass have not been stocked widely beyond their native waters. However, they have been introduced to many new lakes and ponds within their ranges. Many of these releases have been made by anglers and pond owners rather than by professional fishery men. Experimental stockings of white perch have been made as far west as Nebraska. The yellow bass has not demonstrated an ability to adapt readily to artificial impoundments as has its relative, the white bass.

All of the basses take artificial lures readily, and hit

hard with gritty determination. They are not acrobatic and seldom put on an aerial show, but they roll on the surface, make long and determined runs and slug it out in the depths. Even the little white perch rarely disappoints the angler.

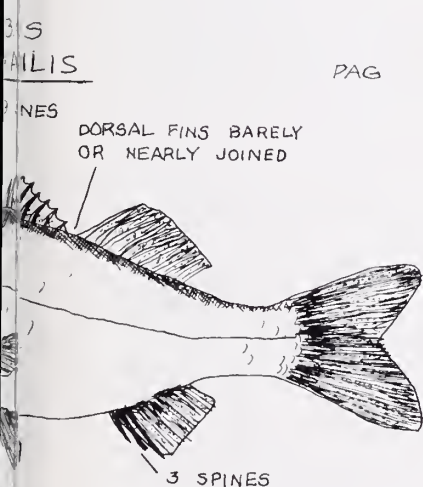
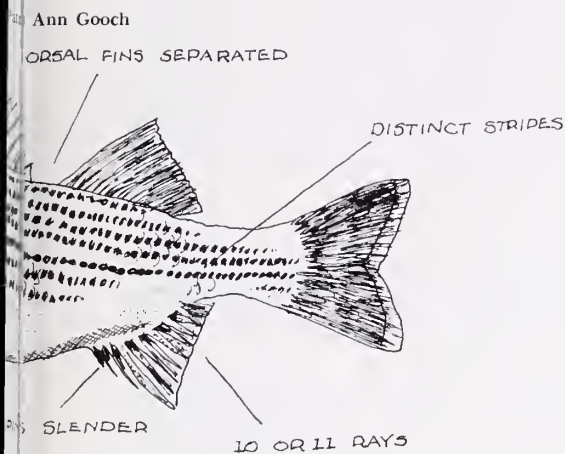
The true basses are school fish, and this gives them

ods. Anglers operate from small charter boats and private yachts or outboards. Charter boats capable of fishing a party of three to five anglers are very popular in the Chesapeake Bay and other waters where the big bass abound.

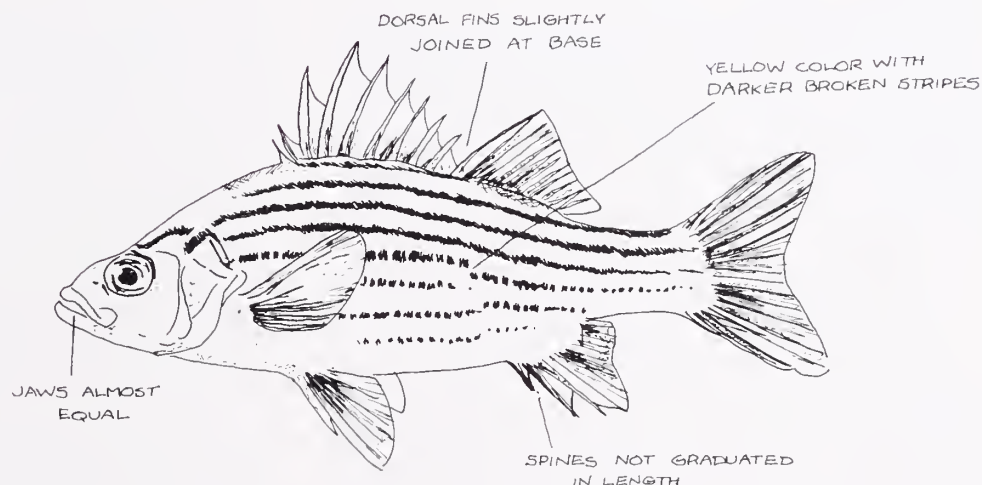
And of course, the striper has long been a favorite of the hardy surf-fishing angler. Standing knee deep in the surging surf and casting heavy lures beyond the breakers along a wave tossed beach is a heady experience that many anglers will swear tops all forms of angling. The trollers are probably more successful, but I doubt that the dedicated surf fisherman could care less.

Fly fishermen wade the flats and work popping bugs over schools of feeding stripers, and in some parts of their range, plug casters fish for them in much the same manner that they would for largemouth bass. Bait fishermen drift soft shell crabs to hungry stripers.

Probably the most popular method of fishing for white bass is to cruise slowly about a lake watching for



PERCH
AMERICANUS PAG



YELLOW BASS
MORONE MISSISSIPPIENSIS PAG

added angling appeal. For once the angler lands a fish he can be reasonably sure there are others around. Once he determines what they are hitting and the depth at which they are feeding, he can anticipate some fast fishing.

With most of the fish running small—a pound or two at the most—light tackle adds considerably to the thrill of fishing for white perch and for both the white and yellow basses. For the most part, however, heavier tackle is indicated for the larger striped bass, though these fish too may run small in certain waters. When they do, they too provide exciting light tackle fishing. Spinning tackle probably takes most of the bass caught in this country, though some anglers may prefer fly rods or even light baitcasting tackle.

Choose your tackle, and you will find a member of the bass family ready to take you on.

Probably the bulk of the striped bass caught in the United States and Canada are taken by trolling meth-

“jumps.” The “jumps” occur when the schools of bass discover a school of shad and tear into them, creating quite a disturbance as the frantic little fish skip over the surface in an effort to escape. The angler then moves in and casts to the school until it sounds. He then looks for another school. Light spinning tackle is ideal for this kind of fishing.

When the bass are not feeding on the surface, the angler must resort to fishing deep, trolling spinners or small lures in channels, bays or over sand bars, or fishing near the bottom with small live minnows. During the summer months night fishing is popular.

Another popular method of fishing for white bass comes in the spring as they make their spawning runs up feeder streams. Anglers line the banks or fish from boats, casting small lures, or fishing with live bait.

Most yellow bass are caught on live baits such as minnows, garden worms and night crawlers. Cut baits

(Continued on page 16)

are also popular. Trolling near the bottom with spinner-bait or spinner-fly combinations is often productive. When the yellow bass move into the shallows, spinners, spoons, flies and popping bugs are productive. They produce exciting fishing.

Worms are probably the most frequently used bait in fishing for tasty white perch. Like the white bass, they make spawning runs in the spring, and when they do the fishing can be fast and interesting in tributary streams, shallow coves or river estuaries.

Probably the second most popular method is casting tiny spoons and lures with light spinning tackle. The little bass hit hard and fight well on light tackle.

Fly fishing enthusiasts catch white perch on small streamers and spinner-fly combinations, and watch for late evening rises when the perch dimple the surface and suck in small insects. This is dry fly time—and rare sport while it lasts. The white perch holds an edge over the other basses in that it is a favorite of ice fishermen.

The white and striped bass have long been popular market fish and so their food value is well established. Their meat is white and flaky and very tasty. The

firm, succulent meat of the white perch is delightful on the platter and, in the spring, perch roe dipped in flour and eggs and quickly browned makes a rare feast. The flesh of the yellow bass is also white and flaky and delicious when pan or deep-fat fried.

While both the white and yellow basses are relatively short-lived, they are very prolific, laying up to half a million eggs at spawning time. Most white bass die before they are four years old, and very few yellow bass live longer than five years. Both the white perch and striped bass lead longer lives—up to 12 to 15 years with some healthy fish exceeding that life span. They too are prolific.

The striped and white basses have been raised successfully in hatcheries and have proved themselves adaptable to life in the big impoundments. These basses have been successfully crossbred, developing an interesting hybrid.

All things considered, the true basses could well become the bass of the future. They have already staked out a strong claim to a share of American angling. That share is not likely to diminish. Given time they may well challenge the large and smallmouth bass to their just claim as the basses of America.

SCIENCE MUSEUM OF VIRGINIA

By MILTON J. ELLIOTT, III

*Assistant to the Chairman, Board of Trustees
The Science Museum of Virginia*

A STATEWIDE science museum system—designed to stimulate a broad understanding of science, particularly as it relates to man and his environment—is being developed by the board of trustees of the Science Museum of Virginia.

The Science Museum was created by the General Assembly in 1970, and the legislation, taken in large measure from a comprehensive Study Commission report a year earlier, established the Museum's purposes, authorized appointment of a board of trustees, and empowered them to proceed with the Museum's development.

Three or more quality museum facilities, serving major population centers of the state, are visualized by the Museum's board of trustees. Each would be concerned with one or more scientific disciplines, including the physical and botanical sciences, natural history, industry and technology, oceanography and limnology, and zoology; and each would be equipped for the advancement and diffusion of knowledge through techniques that enhance the pleasure of learning.

The regional museums would be supplemented by a series of cooperating outreach centers, where high quality, professionally prepared exhibits could be placed on loan. These centers would utilize existing community structures such as colleges and universities, public

and private schools, nature centers, and other museums.

According to board chairman Roscoe D. Hughes of Richmond, "We see the Museum's role as complementing the work of local educators through cooperative programs to supplement classroom instruction. The Museum," he added, "with its wide variety of exhibits and collections, can stimulate the learning impulse in all of us."

Selection of board members was completed by the Governor in February, 1971, and the first official meeting was held in March. Along with Hughes, they include: T. Dale Stewart, vice chairman, McLean; Mrs. William T. Stuart, Jr., secretary, Rosedale; Mrs. J. T. Bird, Salem; Lyons Davidson, Lynchburg; Mrs. William T. Reed, Jr., Manakin-Sabot; Harold Soldinger, Norfolk; and William J. Vaughan, Virginia Beach.

The trustees requested a little more than \$400,000 from the State for the 1972-74 biennium, representing, Hughes said, "a budget that covers just the necessities for continuing our program."

Recognizing the need for revenue in addition to State appropriations, the board is planning a fund-raising campaign between 1972-75 expected to raise \$4-\$5 for every \$1 from the State. Sources to be included in this effort are localities interested in a museum facility, foundations, corporations, the Federal Government, and others.

As envisioned by the board, the Museum's general purposes are to deepen our understanding of man's environment, enlighten citizens of all ages in the principles of science and technology, provide special facilities for collecting, housing, and exhibiting the natural resources and heritage of Virginia's scientific history, and foster a love of nature and a concern for its preservation.

FISH HEAD STEW

By MAJORIE LATHAM MASSELIN

Richmond

"SAY," the Friendly Fisherman began, addressing his wife, "did you ever ask Majorie if she wanted those fish heads?"

"Of course I want them!" I chimed in before Mrs. Friendly Fisherman could collect herself to reply. But then she did.

"Half a freezer full?" she asked a trifle tartly. I suspect she is not very fond of fish heads. On the other hand, the quantity did rather blunt my own enthusiasm. I suppose I could open a restaurant and call it "The Sign of the Fish Head" and serve nothing but chowder the first six months or so. Or possibly I could make them all up into stock and reduce it and freeze it . . . *possibly*, I say, but I think there may be a point of diminishing return involved somewhere in the equation. Half a freezer full of fish heads is really quite a large collection. It is much simpler to use them up two or three at a time.

Just about *any* fish head will make a good stock. Stock can be used in sauces for fish as well as to strengthen the broth of a stew or chowder. But if you want to make a real old-timey fish stew or fish chowder which uses the meat from the head, it is best to limit oneself to those fish having a firm white flesh when cooked. The larger the head, the more meat, but even a smallish or moderately sized head has a great deal more fish in it than one would suspect if one has never cooked a fish head and pulled it apart to see. In a really large head from something like a cod, the amount is phenomenal.

Years ago fish markets used to sell fish heads or fish head and shoulder, and some of the old cookbooks give recipes that make this plebeian dinner sound extremely inviting. Late last summer I tried it with an enormous bluefish head that this same nice man presented to me. It was attached to the rest of itself, but the whole was too large for my oven—even crosswise—so we lopped off its head and shoulder and kept it for another day. It would have fed four people more than adequately, but the two of us did away with it. We like fish. And we proved to ourselves that the old cookbooks did not lie. A fish head roasted in the oven does indeed provide an appetizing dinner.

However, this is stew we are about to make, and for a stew it is not at all necessary to have that large a fish head unless you have a very large family to feed because

you could make *gallons* of highly flavorful chowder with one of them, and it would be so full of chunks of fish there would hardly be room left for the potatoes and onions! So just take whatever assortment of odd kinds of fish heads you happen to have (Fisherman's Luck For the Day, so to speak), scrub them well, and put in a kettle with water to cover and the usual collection of onion slice, peppercorns, bay leaf, parsley sprig and perhaps a bit of celery stalk or leaf. Simmer it gently until the fish heads are so completely cooked that they are ready to fall apart but not so long that they actually *do* fall apart. Let them cool in the broth because they will handle easier that way, and then lift them out to a platter and pull them apart.

This should be accomplished quietly and with care if it is the first time you have done it. There are no particular rules to observe. The meat is there waiting to be discovered, but you will find it more easily and in larger pieces if you go at it slowly and cautiously.

Once you have all the meat separated from the bony head, put it aside in a bowl and discard the remains. Next, strain the stock into a clean kettle and reduce it by at least half. This is done by slow simmering if you have time; by rapid boiling if you do not. In the latter case, watch it so that it does not disappear, leaving you only a burned kettle while you are on the telephone.

While this is going on, you can peel and slice some onions and cook them in butter until they are transparent and golden. They are not meant to be burned crisp either. Use about one medium sized onion per cup of cleaned fish meat.

Sliced potatoes are added next, and again, there is no hard and fast proportion, but in general allow a small to medium potato per serving or perhaps I should say per person to be served.

The cooked onions go into the reduced stock with the butter in which they were cooked and the potatoes follow the onions, still raw, and are cooked in the stock. When the potatoes are perfectly cooked so that they can be broken easily with a wooden spoon, add the fish meat and an amount of rich milk or half-and-half equal to the amount of fish stock. Taste it and correct the seasoning with salt and *white* pepper, then let it all come just to the point of boiling. Pour it into a heated soup tureen, float a "piece of butter the size of a walnut" on it to melt, strew a little chopped parsley over the top for color interest and serve it up, piping hot, with plenty of good old-fashioned unsalted soda crackers.

And if you haven't had any gingerbread lately, serve *that* for dessert. Bring it warm from the oven with a spoonful of freshly made applesauce and a goodly dollop of *real* whipped cream on top.

Such a supper *should* stimulate its own brand of conversation, but if not, *you* start it going in the right direction by mentioning the sturdy, independent breed of men who founded this nation and get the family thinking seriously on what our American Heritage is all about.



Activity on the dock during the Fishing School and Better Fishing Clinic.

Photo by S. S. White

By C. L. NETHERTON, *Asst. Professor*

*Physical Education and Intramurals
Northern Virginia Community College
Annandale*

Fishing Hits the Campus

FOR five evenings in May, fishermen and would-be fishermen, some 450 of them from more than forty communities around the Washington, D. C., beltway, registered and attended a Fishing School at Northern Virginia Community College in Annandale, Virginia. Individuals, couples and family groups of all ages came from as far away as Middletown, Leesburg and Woodbridge on the Virginia side of the Potomac and the Rockville and Landover areas on the Maryland side.

At the first session, this author, as Assistant Professor of Physical Education at Northern Virginia Community College and Director of the Fishing School, clearly stated the theme and purpose of the Fishing

School and Better Fishing Clinic. General objective was education of the general public and fishermen in the selection and use of fishing tackle.

The first session, held in the spacious student cafeteria, included a lecture and demonstration on the selection and use of freshwater and saltwater tackle. The lecture/demonstration was supported with charts, film strip with narrative and was concluded with the McGraw-Hill film, "Still Water." For the hour before the lecture and demonstration, participants were treated to fly tying demonstrations, viewed interesting and informative bulletin board displays of fish and fishing, and received numerous educational materials donated by more than thirty tackle manufacturers and several



Participants assigned to stations for instruction on the waterfront area of the college campus.

S. S. White photo

conservation departments. The tackle manufacturers were most generous in furnishing brochures, catalogs, baits, lines, lures, pictures, poles and reels for door prizes.

Even though the first session was held indoors, the school and clinic was planned as a participating clinic for those in attendance. The outdoor sessions on the athletic field, lake shore and dock were planned to give participants an opportunity to improve their casting and fishing skills. The premise on which participating sessions were planned says that the more skillful you are with fishing tackle, the more successful you will be while fishing. That is to say, "the single most important contributing factor to successful fishing is successful casting. Successful casting is delivering the bait, either natural or artificial, to the area where fish may be taken, with ease and accuracy, and without endangering the safety of the fisherman or his fishing companions."

The second session, scheduled for fly fishermen only, produced more than one hundred enthusiastic fly rod-ders. After a brief introduction and preliminary instruction given on the adjacent athletic field by the director, each participant was assigned to a station on the dock or along the edge of the lake. These stations were manned by very capable instructors from the National Capital Casting Club and the Atlas Sport Store. Equipment was checked, appraised and adjusted. Basic fundamentals of casting the fly were taught and practiced under the watchful eye of the instructors. After this second session, the rank beginners went away from the clinic feeling as though they were ready to try their hand at fly fishing, and the more experienced had picked up many helpful hints to improve their fishing techniques.

Spinning, Spincasting and Baitcasting, scheduled for the third session, brought nearly two hundred enthusiasts with varied sizes and makes of tackle. The large number of participants gave the twelve instructors a



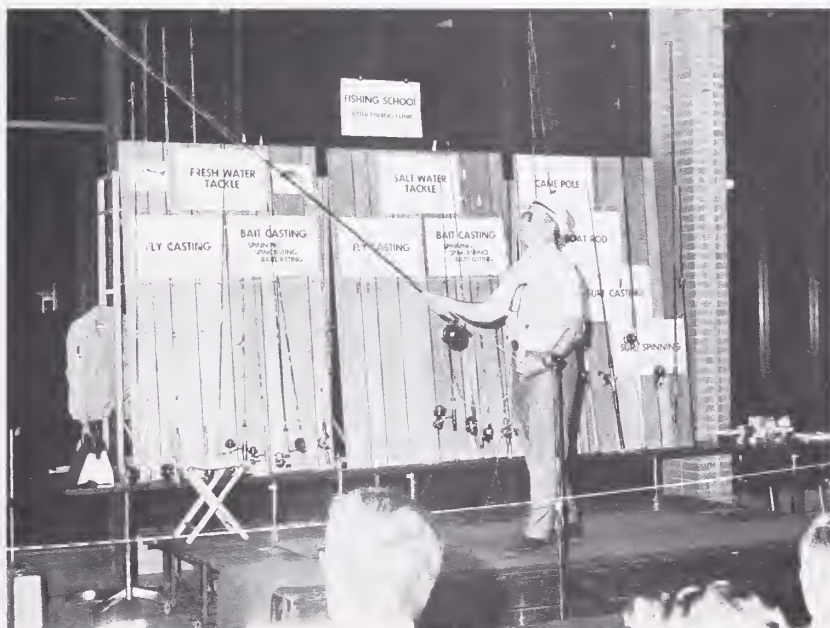
Instruction incorporated tried-and-true techniques of explanation, demonstration and application. Here students receive explanatory lecture indoors.

busy two hours. Every foot of the 100-foot dock and 150 yards of shore line was put to use. The instructors and enrollees alike did an outstanding job of teaching and learning the skill of fishing.

The fourth and, as originally scheduled, final session was to bring all participants together for additional instruction, practice and the awarding of attendance certificates. However, events of the evening cut short the practice sessions, making it advisable to invite the group back for a previously unscheduled fifth session. Everyone seemed elated to have the opportunity for additional instruction and practice. As a follow up on the Fishing School and Better Fishing Clinic, participants had an opportunity to enroll in the credit course, Angling and Casting, offered during the summer quarter at the college and to attend sessions held at the lake by the National Capital Casting Club on Thursday evenings, Saturday afternoons, and on Sundays.

Director Cliff Netherton demonstrates use of fishing tackle.

Photo by James Bradley



Spring Beauty

By ELIZABETH MURRAY

Charlottesville

Illustrated by Lucile Walton



IN about 1745, a letter was sent from Virginia to Carolus Linnaeus, the great Swedish botanist who is remembered chiefly for his firm establishment of the binomial system of nomenclature which we still follow today in the plant and animal kingdom. The letter accompanied a package of plant specimens from this state. The writer apologized for his inexperienced use of Latin, claiming that he had been so long in "these rich regions" that he had become out of the habit of expressing himself in Latin. Rich regions! How right he was, and would still be today. The writer of the letter was John Clayton, one of Virginia's earliest and best botanists.

John Clayton was born and educated in England, but he came to Virginia as a young man in the early part of the eighteenth century, and remained here until his death in 1773. He held a position as clerk of Gloucester County for fifty-three years. He is frequently confused with the Reverend John Clayton who was also a resident of Virginia and keenly interested in natural history, but was only a very distant relation and belongs to a much earlier period. Mr. John Clayton collected extensively in the state and sent many specimens to Europe where they were examined and classified mainly by Linnaeus and Gronovius, an eminent Dutch physician and natural historian in Leiden. In the British Museum in London there is a collection of about five hundred plants which Clayton made, and which is still a valuable asset to students of North American botany.

Linnaeus had a great regard for his Virginia colleague. In 1737 he paid him one of the highest scientific compliments by naming a genus after him. This was

Claytonia, whose attractive white and pink flowers are aptly known as Spring Beauties, one of the first blooms to which we can look forward in the Virginia spring.

Claytonia belongs to the Portulacaceae, a family which includes as well the purslanes and fameflowers. The flowers are often slightly fleshy. They have two sepals, generally five petals, as in *Claytonia*, and five, ten or more stamens. In *Claytonia*, there are five stamens which are inserted on the claws of the petals.

Claytonia virginica may be a foot tall, the stem rising from an underground corm. The flowers have a curious arrangement, being carried on two rows of short stalks on one side of the main stem. Each flower blooms for a day, then bends to one side, and a lateral flower starts up from below and pushes up to bloom in its turn. Opposite the lowest flower on the other side of the main stem there is often a small bract. The flowers vary from white through deep pink with darker red stripes on the petals. The leaves are very narrowly oval, usually with short leaf stalks or petioles. The shape of the leaves is one of the main characteristics which distinguishes this species from *Claytonia caroliniana*, similar in many features and habitat, but with much broader, rounded leaves, and generally smaller, paler flowers.

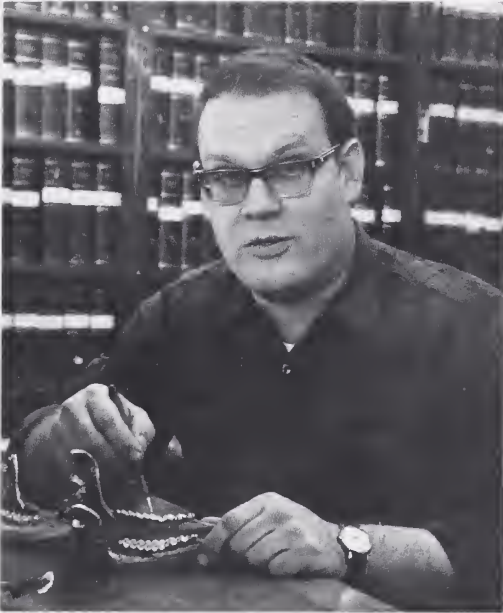
Spring Beauty has a wide distribution up and down the eastern side of the United States, and as far west as Minnesota and Texas. It likes rich oak-hickory woods, rather than woods which contain many evergreens, but also grows in open fields and along roadsides. It can be transplanted easily, the little pea-sized corms growing well in a fairly neutral soil with plenty of humus and moisture. It can also be forced into bloom indoors ahead of its normal flowering time, but it seems somehow a little more honorable to wait and enjoy it as it comes out naturally in the woods. In Virginia one does not have to wait long. It starts flowering in March, and in some areas will be found in bloom on into May.

What a nice flower to be remembered for! But John Clayton deserves his rewards. It was from his notes and catalog that Gronovius compiled the first important flora of British North America. The *Flora Virginica* was published in Leiden in two parts in 1739 and 1743. The first part was actually published without Clayton's knowledge, but apparently when the news finally reached him, through the slow communication channels of the eighteenth century, he was well pleased. He must have been pleased, also, when such an attractive flower was named after him. And we, too, can be glad that this same flower is still quite common in Virginia more than two hundred years later.

Know Your BIOLOGISTS

Text and Photos by F. N. SATTERLEE
Information Officer

FAIRFAX H. SETTLE



Fairfax H. Settle or "Fax," as most people know him, was born in Westmoreland County but spent most of "his growing up" years in King George County. He is the son of Mrs. Louise N. Settle of Tappahannock.

As a youth he was always interested in nature and the outdoors. Part of the summer during his high school years was spent at the Virginia Federation of Garden Clubs' Nature Camp near Vesuvius, Virginia. He was a frequent camper there; later a counselor and subsequently became an instructor.

He attended VPI, where he received a B.S. in forest management and an M.S. in wildlife management. During the time he was attending college he worked for the Game Commission as an hourly employee on the Black Bear project. Following graduate work Fax joined the Commission as a biologist in July of 1964.

Much of his current work is with waterfowl and wetlands, but he also has a great deal to do with other birds and animals in the 25 county area over which he has jurisdiction.

He is married to the former Sally Spiller from Fredericksburg and the couple lives in Tappahannock.

WILLIAM E. NEAL

Bill Neal is supervising fish biologist with responsibilities for the warm-water type fish; i.e., those fish such as largemouth and smallmouth bass and the striped bass as compared to cold-water fish such as trout.

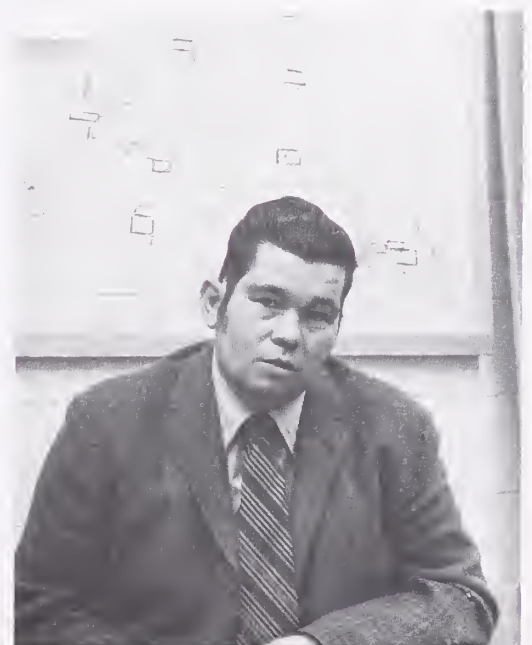
He is originally from Stokesdale, North Carolina, and graduated with a B.S. in biology from N. C. State. His graduate degree is also from that school, where he received an M.S. in fish biology.

Bill became interested in wildlife and biology as a boy and has liked to hunt and fish as long as he can remember. His father was a hunter and much of this love of the outdoors was passed on to his son.

For three years Bill served in the U. S. Army as a radio operator and in May of 1963 was engaged by the Virginia Game Commission as a district biologist with responsibilities for the striped bass program.

One of Mr. Neal's biggest responsibilities is his connection with the fish-rearing program. This is the delicate period in the life of a fish, between the time that it is hatched and it has grown to releasable size.

The former Carlene Joyner from Summerfield, North Carolina, is Mrs. Neal, and they make their home in Lynchburg, Virginia.





Edited by HARRY GILLAM

Commission Purchases Fauquier Hunt Area

The Commission of Game and Inland Fisheries has completed purchase of a 1,953 acre tract in Fauquier County to be used as a public hunting area. The property, known locally as the Smalley tract, is located on the east slope of the Blue Ridge on the western edge of the county. A small portion of the tract actually extends into Warren County. All but 30 acres of the parcel is woodland, the remaining unforested portion being an abandoned apple orchard partially grown up to brush. There is a 10 acre lake on the property which has potential for trout fishing.

Since most of the woodland has been recently logged, the area should support large numbers of deer and grouse. The Appalachian Trail crosses the property near the western edge along the summit of the Blue Ridge. The topography ranges from rolling foothills to the steep slopes of the main Blue Ridge. Access to the property is via Route 688 from Markham P. O. The area lies only 4 miles from the proposed I-66 route and 5 miles south of Route 50 at Paris. It should provide public hunting within less than an hour's drive for northern Virginia residents. This newly acquired area will not be open to hunting until in the fall of 1972.

Thoughtless Slaughter



This unusual "piebald" doe was illegally killed at night in James City County, reports Game Warden W. E. Eggleston, who saw the doe grazing along the road less than an hour before he found her dead. A suspect has been charged in the case which is still pending in court.

Public Fishing Lake Guide Offered

The Virginia Commission of Game and Inland Fisheries has received a revised printing of its information booklet "Public Fishing Lakes." The 28-page booklet contains articles, maps, and photos covering each of 20 state-owned lakes plus two millponds on which the state holds fishing rights. Fishing rules are listed for each lake along with facilities such as ramps, camping, picnic areas, and boat rentals. Location maps for each lake aid in following county secondary roads to the lake site. Copies may be obtained free by sending name and address to Lake Book, P. O. Box 11104, Richmond, Virginia 23230.

Freak Buck



Harry Gooch of Keswick, left, bagged this unusual buck with downturned antler while hunting in Fluvanna County this season. Such abnormalities are usually caused by some injury to the animal while the antlers are forming. The seven pointer was bagged by Gooch's hunting companion, Randy Roberts. Fluvanna County had a record kill of 1205 deer during the season just ended.

Fee Fishing Area Approved for Carroll County

The Virginia Commission of Outdoor Recreation has agreed to go 50-50 with the Game Commission in financing a fee trout fishing facility in Carroll County. The new pay-as-you-go stream, the third such facility in the state, will be located near Woodlawn south of U.S. 58. The Commission has under option an 850 acre tract including some 4 miles of Crooked Creek, currently a native brook trout stream, which it plans to develop for the new venture. The Crooked Creek

area will be similar to the Commission's facility on Big Tumbling Creek on the Clinch Mountain Wildlife Management Area near Saltville. Crooked Creek is about the same size as Big Tumbling and about the same length. There is a possibility of leasing an additional mile of the stream to expand the fishing opportunity.

Patrons of these streams pay \$1 for a daily permit required in addition to their valid fishing license. The special three-day license (which costs \$1.50) is valid, making such facilities especially attractive to non-residents and tourists vacationing in the area. Last year nearly 30,000 permits were sold on Big Tumbling Creek. Trout are stocked regularly two to three times per week to replace those caught. Anglers are limited to five trout of any size per day.

The Carroll County facility is still in the early planning stages, and due to construction that will be required, it will be doubtful that it will be open to public fishing during the 1972 season. The target date for operation as a fee facility is April of 1973.

New Reptile and Amphibian Book



This new book published by Doubleday & Co. differs from the ordinary field guide in that it is an interestingly written story of this fascinating group of animals. The author, Dr. Alan E. Leviton, is chairman of the Department of Amphibians and Reptiles at the California Academy of Sciences. The 250 page volume is profusely illustrated with actual photographs of the animals in natural settings, most of them in full color. Although the scope of the book is the whole North American continent, common Virginia species are well represented, both in the text and in photographs which should make identification easy.



Edited by ANN PILCHER

Firearm Safety Project Completed



Photo courtesy Southwest Virginia Enterprise

Game warden R. G. Mitchell, Susan Kegley of George Wythe H.S., Jaycee Coordinator Eddie Wolcott, Wythe Co. Vocational School student Richard Brewer, and Game Refuge Supervisor Virgil Boone are pictured during one of the Wythe County Schools hunter safety course sessions.

Wytheville Jaycees, in conjunction with the Game Commission, have completed a three-year project of firearm safety training in Wythe County. Purpose of this project was to instill in young people an awareness of the necessity for safe use and handling of firearms at home and in the field.

The project began in 1969 with the training of 57 adult instructors (local merchants, professional men and other concerned sportsmen) by James Kerrick, Commission Safety Officer, assisted by Robert Mitchell and R. M. Wolfenden, game wardens.

Next phase was presentation of the course to 165 Boy Scouts from Troops 58, 60, 197 and 290 by Jaycees qualified as hunter safety instructors.

During April 1971, the final phase of the project was completed with the teaching of 1,698 students in the Wythe County School system: 448 from George Wythe and Wythe County Vocational Schools, 169 from Rural Retreat High School, 474 from Fort Chiswell High School, 98 from Speedwell Elementary and 509 (100% of the student body) from Wytheville Intermediate School. Every student who participated received these supplementary materials: National Rifle Association Hunter Safety Handbook, Ten Commandments of Safety, ABC's of Safe Hunting and Gun Owner's Creed. Upon completion of the course,

each student was required to take an examination on various aspects of firearm safety, and those successfully completing the course received an NRA patch, an identification card, and certificate of Achievement from the Game Commission.

Jaycee Eddie Wolcott coordinated the project with the Game Commission, Scout Troops and county school system. Game Warden Robert Mitchell directed the program with the assistance of fellow wardens Virgil Boone,

Good Marksmen, These Ten Year Olds



A fifth grader at New Kent Elementary School, Bill Mountcastle of Providence Forge, 10, killed his 8-point, 160 lb. white-tail on December 11.



Alone in the mountains about 7 a.m. November 15, 1971, 10-year-old David Wilson of Dublin brought down his spike buck with a 12 gauge shotgun and buckshot. He bled the deer, which weighed about 120 lbs., inserted a game tag in its ear, then went for help to get it off the mountain.

Donald McLeod, Beecher Perry and Page Clark. Ken Farmer, Don Rowe, Ron Kime, Rollie Nye, Curt Campbell, and Dempsey Craig of the Jaycees assisted in the project.

The Game Commission and the Jaycees are optimistic that the effect of this program will be a marked decrease in firearm accidents.

Arbor Day Centennial

The 100th anniversary of Arbor Day in the United States will be celebrated this year. It was first observed in Nebraska in 1872 after J. Sterling Morton had introduced a resolution to his state board providing for a day to be set apart for tree planting. That first Arbor Day resulted in a million trees planted in Nebraska, once practically a treeless state. By 1885, 13 years later, Nebraska had become a leader in practical forestry.

Our State Code sets the second Friday of March as Virginia's Arbor Day. Some states celebrate it in April. In 1970 President Nixon signed a bill declaring the last Friday in April as National Arbor Day for that year. Right now people are working to get House Bills H.J. 563 and H.J. 677 passed, designating the last Friday in April as Arbor Day nationally.

Schools, garden clubs, youth groups—all are being encouraged to plan Arbor Day ceremonies and to plant a tree as one step ahead in the job of reviving and improving our precious natural environment, providing food and cover for wild creatures, nutrients for the soil, shade and beauty for man, and eventually, perhaps, the raw material for wood products.

Astride His Trophy

10 year old Scott Lindsay of Williamsburg plans to enter this 160 lb. 10 pointer in the Big Game Trophy Contest. Using an L. C. Smith double, Scott killed his first deer with one shot in James City County on December 11.





Edited by JIM KERRICK

Children and Boats— A Natural Partnership

If there ever was a natural partnership in the sporting world, the dynamic duo of children and boats stands among the tallest.

Children start out playing with boats when they are still infants, splashing around in the tub with their little plastic sailboats. But, children are also one of the largest groups of boaters in the country. After all, that's the aim: introduce new people to the world of boating. You can't get any newer than kids.

Starting from about the age of ten, youngsters can become accomplished boatmen in no time. The one big problem parents have with their kids is what kind of boat to get them.

Parents, take it easy on the first boat for Junior. A small sailboat, no longer than 18-feet, should keep him quite busy on a breezy summer afternoon. Sailboats, catboats and dinghies are ideal first boats for children.

If the heir to the family fortune wants a powerboat, it should be no longer than about 18-feet and the engine should not be a high-speed performance type. Let him get some needed experience before he graduates to a faster model.

Before giving your child a boat, make sure he or she is a competent swimmer. Not an Olympic champ, mind you, just one who is self-sufficient and not afraid. If the youngster is a confident swimmer, he will be a confident boatman.

There are many rules pertaining to boating. No one could expect a ten-year-old to know them without adequate teaching beforehand. In many states, it's required that children below a certain age pass a state boating course and receive a certificate stating so.

Different organizations, U. S. Power Squadrons and Coast Guard Auxiliary to name two, sponsor free classes on boating. It's a good idea to enroll your

child in one.

Getting back to the ideal boat, safety is uppermost in most parents' minds when buying a boat for a youngster. Boats that are non-sinkable and self-righting are strongly recommended. A self-righting boat is one whose hull has built in positive flotation, positioned so that the boat won't "turn turtle" if it capsizes.

A perfect sailboat for a youngster is one which can be readily self-righted after a capsize. When looking at different sailboat models, make sure the rigging is not too difficult to handle and check the cockpit to see if it is self-bailing.

A self-bailing cockpit is one which drains out any water that gets in with specially made ports as the boat moves through the water. The ports are designed to let the water out, not in.

By the time your youngster becomes master of his craft, he will branch out into the other water sports allied with boating. Water skiing is one summer pastime for youngsters rivaling other summer sports for equal time.

If looking for a powerboat for water-skiing, be certain there is a special towing bracket mounted over the stern. Back-to-back seating for the observer also should be provided.

A boat for fishing and scuba diving should have a fairly large cockpit so you don't have to climb over equipment to get a needed hook or a pair of fins. For diving, get a boat with a low free-board or built-in boarding steps.

Boating is one sport which can provide healthy and natural fun for your child.

Running Aground

Running aground is a common mistake made by many boatmen, and when this happens the safety of your crew or passengers should be foremost in your mind. First, have them don life jackets and, if damage occurs, direct them to the section of the vessel that is not damaged.

Keep cool and size up the situation. Is it a shoal, sand bar or mud bottom? Is the water shallow and how far is it to water deep enough to float your vessel? What portion of the vessel is aground?

Check to determine if she is leaking and, if so, try to stop it.

Your anchor can and will play a big part in refloating your vessel. If you have a small boat on board or in tow, take your anchor out to deeper water and be sure it is secured. Keep your anchor line tight. Your passengers again can assist you by rocking the boat or going to the bow or stern to shift the weight in the vessel. The tide will take you off providing the tide is rising, but if the tide is falling more than likely you will remain stranded until the next high tide, or until a larger craft takes you in tow. In any event it is always a good idea to fly some kind of distress signal or use flares to attract attention. If you have radio communications, be sure and give coordinates as to your exact location and the condition of your vessel.

When a tow line is attached, be sure that the line is secured to several bits or cleats. If a heavy strain is anticipated, lead the tow line completely around the hull. Don't place all the strain in one spot.

If damage is extensive enough that you are taking on water, use anything at hand to plug the hole. Pillows or seat cushions are excellent to plug holes in the hull or deck. Use your bilge pump and keep as much water out of the vessel as possible.

Never haul your vessel out sideways; avoid sudden jerks. Have the towing vessel pull you bow or stern first.

After you have refloated your vessel, proceed either by your own power or by tow to the nearest port. Take your vessel out of the water, if possible, and inspect for damage. Never leave your vessel at the mooring site until you are sure there are no leaks and that she is seaworthy.

1972 TROUT STOCKING PLAN

LEGEND:

* — National Forest Waters
B — Brook Trout
R — Rainbow Trout
BR — Brown Trout

	Period Stocked		
	Preseason	May	June-Oct.
ALBEMARLE CO.			
City Water Works	R	R	
Moarmans R., North & South Fork	R	R	
ALLEGHANY CO.			
Jackson River	R, BR	R, BR	R, BR
Potts Creek	R, BR	R, BR	
Smith Creek*	B, R	R	
Simpson Creek*	B, R	B	
Pounding Mill Run*	B, R	R	
Jerry's Run*	B		
Clifton Forge Reservoir*	R	R	
AMHERST CO.			
S. Fork Piney River & Piney Proper	B, R	B, R, BR	R, BR
Pedlar River (upper)	B, R	B, R	R, BR
Pedlar River (lower)	B, R	B, R	R, BR
Brown Mt. Run*	B	B, R	
Davis Mill Creek*	B	R	
Enchanted Creek*	B, R	B, R	
Little Irish Creek*	B, R	B, R	
Pedlar River*	R	R	B, R
Rocky Raw Run*	B	R	
S. Fork Piney River*	B	B	
Statons Creek*	B	B	
AUGUSTA CO.			
St. Mary's River	B, R	B, R	R
North River*	B, R	R	R
Buffalo Branch*	B, R		
Ramsey's Draft*	B, R	B, R	
Braley Pond*	B, R	B, R, BR	B
Back Creek*	B, R	B, R	
John's Run*	B		
Kennedy Creek*	B		
Upper Sherando Lake*	R	R	
Lower Sherando Lake*	R	B, R	B
Heartstone Lake*	R	B, R	B, R
Puffenbarger Pond*	R		
Elkhorn Lake*	R	R	B, R
Little River*	R	R	
Rawland Pond*	B, R	B, R	
Cald Spring Pond*	B, R	B, R	
BATH CO.			
Bullpasture River	R, BR	B, R, BR	R, BR
Jackson River (No. 623)	R	B, R	R, BR
Jackson River (Gathright)	B, R	B, R, BR	R, BR
Spring Run	B, R, BR	B, R, BR	R, BR
Back Creek*	R	R	B, R
Wilson Creek*	B	B, R	
Mares Run*	B	B	
S. Fk. Pads Creek*	R	R	
Muddy Run*	B	B	
Jackson River (Hidden Valley)*	B, R	R	B, R
Piney River*	B		
BEDFORD CO.			
Hunting Creek*	R	R	R
Battery Creek*	R	R	
BLAND CO.			
Wolf Creek	B, R, BR	B, R, BR	R
No Business Creek	B, R	B, R	
Lick Creek	B, R	B, R	R
Laurel Creek	B, R		
Spur Branch	B, R		
Lick Creek*	R	R	R
BOTETOURT CO.			
Jennings Creek	B, R, BR	R	R, BR
Mill Creek	R	R	R, BR
Roaring Run	R	R	R, BR
North Creek*	R	R	R
Middle Creek*	R	R	R
McFalls Creek*	R	R	R
Cornelius Creek*	R	R	R

	Period Stocked		
	Preseason	May	June-Oct.
BUCHANAN CO.			
Slate Creek	B, R	B, R	
Hurricane Fork	B, R	B, R	
Grassy Creek	B, R	B, R	
CARROLL CO.			
Stuart's Creek	B, R	B, R	
Big Reed Island Creek	B, R, BR	B, R, BR	R, BR
Little Reed Island Creek	B, R, BR	B, R, BR	R, BR
Cracked Creek	B, R, BR	R, BR	R, BR
Burkes Fork	B, R	B, R	R
Paul's Creek	B, R	B, R	
Laurel Fork	B, R	B, R	
CRAIG CO.			
Potts Creek	B, R	B, R, BR	R, BR
Sinking Creek	B, R	B, R, BR	R, BR
Barbours Creek*	R	R	R
North Fork Barbours Creek*	R	R	
South Fork Barbours Creek*	R	R	
Cove Creek*	B		
Lipes Creek*	B		
DICKENSON CO.			
Frying Pan Creek	B, R	B, R	
Caney Creek	B, R	B, R	
Pound River	R	R	R
FLOYD CO.			
Beaver Creek	B, R	B, R	
Burkes Fork	B, R	B, R	R, BR
Howell Creek	B, R	B, R	R, BR
Rush Fork	B, R		
West Fork Little River	B, R	B, R, BR	R, BR
Meadaw Creek	B, R		
Laurel Fork	B, R		
Mira Fork	B, BR	R, BR	R, BR
Little River	R, BR	R, BR	R, BR
Gaase Creek	R	R	
FRANKLIN CO.			
Green Creek	B, R	B, R	
Maggodee Creek	B, R	B, R	
Runnett Bag Creek	B, R	B, R	
FREDERICK CO.			
Back Creek (upper)	B, R	B, R	
Back Creek (lower)	B, R	B, R	
Hogue Creek	B, R	B, R	R
Cedar Creek	B, R, BR	B, R	R, BR
Paddy Run (Forest line to No. 600)	B, R	B, R	
Paddy Run*	R	R	R
GILES CO.			
Big Stony Creek	B, R, BR	B, R, BR	R, BR
Dismal Creek*	R	R	R
GRAYSON CO.			
Big Wilson Creek	B, R	B, R	R
Middle Fork Helton Creek	B	B	
Big Fox (lower)	B, R, BR		
Big Fox (upper)	B, R	B, R	R
Middle Fox Creek	B, R	B, R	R, BR
Elk Creek	B, R, BR	B, R	R, BR
Peach Bottom Creek	R	B, R	R, BR
Helton Creek	R	B, R	R, BR
Turkey Knob Fork Creek	B, R	B	
Hale Lake*	R	R	R
GREENE CO.			
Ivy Branch	B, R	B, R	
South River	B, R	B, R	R, BR
Swift Run	B, R	B, R	R, BR
HENRY CO.			
Smith River	B, R, BR	R, BR	R, BR
HIGHLAND CO.			
Bullpasture River	B, R, BR	B, R, BR	R, BR
Crab Run	B, R	B, R	R
S. F. Potomac River	B, R	B, R	
Laurel Fork	B, R	B, R	
Jackson River	B, R, BR	B, R, BR	R, BR
Back Creek	B, R	B, R	
Laurel Run*		B	B
LEE CO.			
Hardy's Creek	R	R	R
Dry Creek	B, R	R	R, BR
Martin's Creek	B, R	B, R	

(Continued on page 26)

	Period Stocked				Period Stocked		
	Preseason	May	June-Oct.		Preseason	May	June-Oct.
North Fork Powells River	B,R	B,R	R	Little Stony Creek*	R	R	R
MADISON CO.				Cove Creek*	R	R	
Garth Run	B,R	B,R	R	Mountain Fork*	R	R	
Hughes River	B,R	B,R	R,BR	SHENANDOAH CO.			
Rapidan River (fish for fun)	R			Passage Creek	B,R,BR	B,R,BR	R,BR
Robinson River	B,R	B,R		Big Stony Creek (lower)	B,R,BR	B,R,BR	R,BR
Rose River	B,R	B,R		Big Stony Creek (Bayse)	B,R	B,R	
MONTGOMERY CO.				Cedar Creek	B,R,BR	B,R,BR	R,BR
Tom's Creek	B,R	B,R		Mill Creek	B,R	B,R	
S. Fork Roanoke River	B,R,BR	B,R,BR	R,BR	Little Stony (above Woodstock Reservoir)*	B,R	B,R,BR	
Poverty Creek*	R	R		Little Stony (below Woodstock Reservoir)*	R	R	
Craig Creek*	R	B,R		Paddy Run*	B,R	R,BR	
NELSON CO.				Cedar Creek*	B	R,BR	
Tye River	B,R,BR	B,R,BR	R,BR	Mountain Run*	R	R	
North Fork Tye River	B,R	B,R	R,BR	Little Passage Creek*	B	R	
Stony Creek	B,R	B,R	R	Peters Mill Creek*	B,R	B,R	
Rockfish River	B,R	B,R		Tomahawk Pond*	B,R	R,BR	R
PAGE CO.				Upper Passage Creek*	B,R	B,R,BR	
East Fork Hawksbill Creek	B,R	B,R		SMYTH CO.			
Hawksbill Creek	B,R	B,R		Lick Creek (upper)	B,R	R	
Cub Run*	B,R	B,R	R	Lick Creek (lower)	B,R	B,R	
Pitt Spring Run*	B,R	B,R	B,R	S. Fork Holston River (gorge)	B,R,BR	R,BR	R,BR
Upper Passage Creek*	B,R	B,R,BR		S. Fork Holston River (lower)	B,R,BR	R,BR	R,BR
PATRICK CO.				Big Laurel Creek	B,R	B,R	R
Dan River (below powerhouse)	B,R	B,R,BR	R,BR	Staley's Creek	B,R	B,R	R
Dan River (above powerhouse)	B,R	B,R		Middle Fork Holston River	R	R	R
Rock Castle Creek	B,R	B,R		Cregger Creek*	R	R	
Round Meadow Creek	B,R	B,R		Comers Creek*	R	R	R
North Fork Mayo Creek	B,R	B,R		Hurricane Creek*	R	R	
South Fork Mayo Creek	B,R	B,R		Cressy Creek*		R	R
Poorhouse Creek	B,R			Houndshell Creek*		R	R
Big Ivy Creek	B,R	B,R		Dickey's Creek*	R	R	R
Ararat River	B,R			West Fork Nicks Creek*		R	
PULASKI CO.				East Fork Nicks Creek*		R	
West Fork Peak Creek	B,R	R		Canady Creek*		R	R
Tract Fork*	R			Little Laurel Creek*		R	
RAPPAHANNOCK CO.				Raccoon Branch*	R	R	
Piney Branch	B,R	B,R		Roaring Fork*		R	R
North Fork Thornton River	B,R	B,R		TAZEWELL CO.			
Rush River	B,R	B,R	R	Wolf Creek	R,BR	R,BR	R
ROANOKE CO.				Cove Creek	B,R	B,R	R
Roanoke River	B,R,BR	B,R,BR		Laurel Creek	B,R	B,R	
Tinker Creek	B,R	B,R		Roaring Fork	B,R	B,R	R
Glade Creek	B,R,BR	B,R		Little Tumbling Creek	B,R	B,R	R
ROCKBRIDGE CO.				Punch & Judy Creek*	R		
Mill Creek	B,R	B,R		WARREN CO.			
Irish Creek	B,R	B,R	R,BR	Gooney Run	B,R	B,R,BR	
South River	B,R	B,R,BR	R,BR	WASHINGTON CO.			
Hayse Creek	B,R	B,R	R,BR	White Top Laurel	B,R,BR	B,R,BR	R,BR
Bratton's Run*	B			Tennessee Laurel	B,R	B,R	R
Elk Creek*	R	R		Green Cove Creek	B,R	B,R	R
ROCKINGHAM CO.				Big Brumley Creek	B,R	B,R	R
North Fork Shenandoah River	B,R,BR	B,R,BR		Big Tumbling Creek	B,R	B,R	R
German River	B,R	B,R		Valley Creek	B,R	B,R	R
Dry River	B,R	B,R		Straight Branch*	R	R	R
Briery Branch	B,R	B,R		WISE CO.			
Silver Lake	R	R	R,BR	S. Fork Powell River	B,R	B,R	
Lake Shenandoah	R			Burns Creek*	R		
Boones Run*	B,R	R	R	Clear Creek*	R	R	
Shoemaker River*	B,R			High Knob Lake*	R	R	R
Blacks Run*	B,R	B,R	B	WYTHE CO.			
Gum Run*	B,R	B,R		Cripple Creek	B,R,BR	R,BR	R,BR
Skidmore Fork*	B,R	B,R		Francis Mill Creek*	R		
Slate Lick Run*	B,R	R		East Fork Stony Creek*	R	R	
Briery Branch*	B,R			East Fork Dry Run*	R	R	
Briery Lake*	B,R	BR		West Fork Dry Run*	R	R	
Hone Quarry Run*	B,R	B,R		Gullion Fork*	R		
Hone Quarry Lake*	B,R	BR		West Fork Reed Creek	R	R	
RUSSELL CO.				West Fork Peak Creek*	R	R	
Big Cedar Creek	B,R,BR	B,R,BR	R,BR				
Big Cedar Creek (fish for fun)	R		R				
Laurel Bed Lake (fee fishing)	B						
SCOTT CO.							
Little Stony Creek	B,R	R					
Devil's Fork*	R	R					
Stony Creek*	R	R	R				
Straight Fork*	R	R	R				

LAKE STOCKED BY THE VIRGINIA COMMISSION OF GAME AND INLAND FISHERIES

Smith Mountain Lake	Rainbow	South Holston Reservoir	Rainbow
Carvins Cove	Rainbow	Claytor Lake	Rainbow
Philpott Reservoir	Rainbow	Gatewood Reservoir	Rainbow
Flannagan Reservoir	Rainbow	Leesville Reservoir	Rainbow

DESPITE its aggressive, predatory tendencies, the grackle is a bird of high intelligence and deserves attention if not praise. Though universally disliked, it is certainly a successful species, having adapted remarkably to man and civilization. There are probably more grackles now than ever.

Their keen sense of danger is matched with an equal awareness of safety and protection. Like the crow, they seem to know what a gun is for, and even the extent of the danger zone. And they cast suspicious yellow eyes at traps designed for them by irate grain farmers.

Conversely, the grackle has recognized that city parks and villages are, to an extent, refuges, and they breed

So they may have a full clutch of eggs by the first week of April, and young on the wing early in May. Thus they may be finished with nesting responsibilities before other summer birds have arrived from the south.

This early nesting permits them the time and energy to exercise their detestable habit of devouring the eggs and young of other species, and grackles can sometimes be seen roaming the woods obviously nest hunting. They will even attack and kill adult birds the size of a sparrow, whenever they detect a weak or sick individual.

In early summer, grackles begin to gather in flocks, and wander the countryside in search of ripening grain and fruit. As they move about, these congregations

*Bird
of the
Month:*

The Common Grackle

By JOHN W. TAYLOR
Edgewater, Maryland

regularly in urban backyards. They would prefer to nest in small colonies, especially in cedar thickets or pine groves, but they will readily nest in isolation and in a variety of other habitats.

The male grackle takes very seriously his courtship ritual, though it has its comic aspects. He puffs out to grotesque proportions, opens his wings, spreads his tail and struts about rigidly. At intervals he sings what he no doubt thinks is a song, but which sounds more like escaping steam.

Grackles are among the first birds to arrive north in the spring, and begin nest building almost immediately.



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increase in size, and by early fall, they may contain thousands of birds. During this period they can do heavy damage to cultivated crops. Later, as autumn advances, acorns are eagerly sought, and the huge flocks blacken the oak woods.

Taxonomists have placed the grackles in the family Icteridae, which includes the orioles and blackbirds, and at one time separated them into two full species: the purple grackle and bronzed grackle (and a number of subspecies). Now it is general practice to consider them all as one species, excepting of course the larger, quite distinct boat-tailed grackle of the seacoasts.

ecology: a wild idea

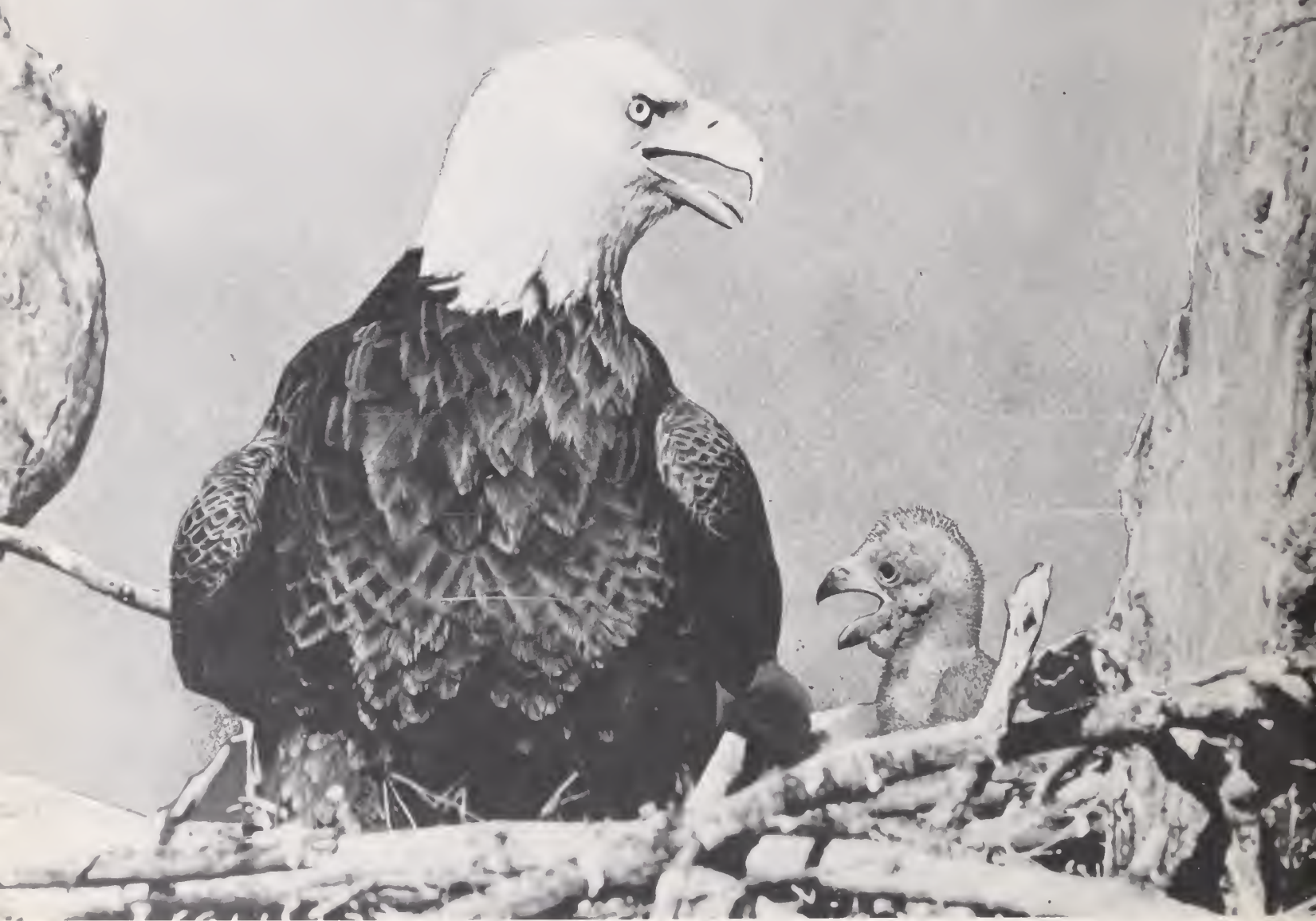


Photo by Frederick Kent Truslow

national wildlife week national wildlife federation and state affiliates march 19-25, 1972